



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 31, 2018

Amerco Real Estate Company  
2727 North Central Avenue  
Phoenix, AZ 85004  
Attn: Larry Hine,  
Environmental Operations Manager

SUBJECT: MILITARY TRUCK SALVAGE YARD — RESULTS AND CONCLUSIONS OF  
THE U.S. NUCLEAR REGULATORY COMMISSION'S INITIAL SITE VISIT AND  
REQUEST FOR CONFIRMATION OF VOLUNTARY CONTROLS

Dear Mr. Hine:

I am writing to provide you with the results of the U.S. Nuclear Regulatory Commission (NRC) staff's initial site visit to the property at 5700 Boundary Avenue, Anchorage, Alaska, performed on July 18-19, 2017. The results are summarized below and are discussed in further detail in the enclosed report.

As described in the site summary that was attached to our letter dated October 6, 2016,<sup>1</sup> our records indicated that the property at 5700 Boundary Avenue, was the site of a former military truck salvage yard known as E.A. Patson Parts and Equipment, which collected military vehicles and "new old stock" (i.e., N.O.S) vehicle parts. The property is currently owned by the Amerco Real Estate Company and being leased by U-Haul Moving and Storage of North Anchorage (lessee). Based on the site summary, the staff suspected that radium-226 (Ra-226) was present in World War II-era vehicles and parts collected at the site by the former military truck salvage yard. Radium is a naturally occurring radioactive material. One use for radium was in fluorescent paint for luminous aircraft and vehicle instruments. The use of radium for this purpose generally ended several decades ago due to radiation safety considerations.

During the initial site visit in July 2017, the staff conducted radiation surveys over approximately 70 percent of the land areas and inside approximately 50 percent of the buildings located on the property. The staff did not survey under the current driveway or building foundations.

Based on the observations during the initial site visit and results of the radiation surveys performed, the staff confirmed the presence of Ra-226 in some of the military dials and gauges stored inside one of the buildings that had been associated with the military truck salvage yard. Further, based on observations of the dials and gauges containing Ra-226 that were readily visible, as well as the radiation survey results obtained from inside one of the buildings, it was estimated there were fewer than 100 dials and gauges containing Ra-226 stored in the building; therefore, you are considered a General Licensee in accordance with the NRC's rules and regulations.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML16277A282.

The extent of contamination from the military dials and gauges could not be determined as part of the initial site visit, due to portions of the buildings being inaccessible. However, the staff was able to perform an analysis on one of the gauges where higher dose rates were measured and concluded there was no removable contamination from that particular gauge because the gauge was intact. Please note that the survey performed by the staff did not fully characterize your property. More detailed radiation surveys would be necessary to assess any possible contamination of building surfaces, structural surfaces, or objects, and in surface soils.

The staff also observed that access to both of the buildings, where radiation above background was measured, was limited and that the lessee controlled the buildings by lock-and-key. The NRC regulates the dose limit to the public of 100 millirem per year (mrem/yr) from NRC regulated materials, as specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 20.1301, *Dose limits for individual members of the public*. Based on the radiation survey measurements, controls established by the lessee of the buildings and using conservative assumptions for time, distance, and shielding, the staff concluded that no member of the public was likely to receive a dose in excess of 100 mrem/yr due to the presence of the dials and gauges.

Up to 100 luminous products (e.g., gauges) may be possessed under a general license in accordance with 10 CFR 31.12(a)(4), *General license for certain items and self-luminous products containing radium-226*. Further, as a General Licensee, certain requirements must be followed under 10 CFR 31.12(c), which include:

- 1) You must notify the NRC should there be any indication of possible damage to the product so that it appears it could result in a loss of the radioactive materials. A report containing a brief description of the event, and the remedial action taken, must be sent to the Director of the Office of Nuclear Material Safety and Safeguards (NMSS), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 within 30 days.
- 2) You must not abandon products containing Ra-226. The product, and any radioactive material from the product, may only be disposed of in accordance with 10 CFR 20.2008, *Disposal of certain byproduct material*, or by transfer to a person authorized by a specific license to receive the Ra-226 in the product or as otherwise approved by the NRC.
- 3) You must not export (i.e., transfer to a person or an international organization in a foreign country) products containing Ra-226 except in accordance with 10 CFR Part 110, *Export and Import of Nuclear Equipment and Material*.
- 4) You must dispose of products containing Ra-226 only at a disposal facility authorized to dispose of radioactive material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005, by transfer to a person authorized to receive Ra-226 by a specific license issued under 10 CFR Part 30, *Rules of General Applicability to Domestic Licensing of Byproduct Material*, or equivalent regulations of an Agreement State, or as otherwise approved by the NRC.
- 5) You must respond to written requests (including this one) from the NRC to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If you cannot provide the requested information within the allotted time, you must, within that same time period, request a longer period to supply the information. A written justification for the request must be provided to the Director of NMSS by means of an appropriate method listed in 10 CFR 30.6(a).

In accordance with 10 CFR 31.12(c)(5), the staff requests that you provide a response in writing to the following requests for information, within **120 days** from the date of this letter.

- 1) Please provide your intention for either continued possession of the military dials and gauges or disposition of the items.
- 2) Please provide information on the status regarding access to the buildings where military dials and gauges were being stored. Has anything changed since the initial site visit in July 2017? In addition, are there other controls in place to limit access to these buildings?
- 3) Please provide the inventory number of radium dials and gauges that are stored within each building. Please note that if you have more than 100 gauges, you may need a Specific License. If, while determining the inventory of the site, you discover any broken dials please note that a report to the NRC is required in accordance with 10 CFR 31.12(c)(1).

Please contact the NRC should you have any questions regarding the information requested above, or regarding the general license regulation and requirements.

As previously mentioned, additional work is necessary should you elect to determine the extent of contamination. As part of any voluntary cleanup effort, we suggest that you consider consulting an NRC or Agreement State specifically licensed service provider to ensure that there is limited potential for radiological contamination to be spread. Should you wish to dispose of the gauges and instruments, a licensed service provider should be utilized to conduct any packaging of radioactive waste for transport. Please be aware that any remediation activities pursued at your site may also have to meet any State of Alaska requirements and standards. As previously discussed, any voluntary site cleanup is the financial responsibility of the site owner.

As the NRC inspector discussed with the lessee at the end of the initial site visit, the staff recommends that you maintain limited access and continued control of the buildings that stored the military dials and gauges containing radium. Based on the restriction of access to the buildings as discussed above, the staff concludes that there are no immediate health and safety concerns at this site.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

We will be contacting you in the near future to answer any questions you may have regarding this letter. Additionally, you may also contact Mr. Stephen Koenick, Chief, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Materials Safety and Safeguards, at (301) 415-6631, or Mr. Jeffrey Whited, Project Manager, at (301) 415-4090.

Sincerely,

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John R. Tappert, Director  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 03038976

Enclosures:

1. Site Status Report for the Military Truck Salvage Yard (5700 Boundary Avenue)
2. Copy of Applicable NRC Regulations

cc w/ enclosures:

U-Haul Company of Alaska  
4751 Old Seward Highway  
Anchorage, Alaska 99503  
Attn: John Norris

REGISTERED LETTER – RETURN RECEIPT REQUESTED

SUBJECT: MILITARY TRUCK SALVAGE YARD —RESULTS AND CONCLUSIONS OF  
THE U.S. NUCLEAR REGULATORY COMMISSION'S INITIAL SITE VISIT  
Dated May 31, 2018

**DISTRIBUTION:**

RidsRgn4MailCenter

M. Shaffer, RIV  
R. Browder, RIVL. Howell, RIV  
J. Whited, NMSS

R. Kellar, RIV

**ADAMS Accession No.: ML17214A755****\*via e-mail**

<b>OFFICE</b>	DUWP/MDB/PM	DUWP/LA	DUWP/MDB	DUWP/MDB
<b>NAME</b>	JWhited	CHolston	RNelson*	CGrossman*
<b>DATE</b>	08/03/2017	08/03/2017	08/09/2017	08/17/2017
<b>OFFICE</b>	RIV/DNMS/BC	DUWP/MDB/BC	OGC (NLO)	DUWP
<b>NAME</b>	RKellar*	SKoenick*	Ilrvin*	JTappert
<b>DATE</b>	04/10/2018	04/16/2018	04/24/2018	05/31/2018

**OFFICIAL RECORD COPY**

**Enclosure 1**

**OAK RIDGE ASSOCIATED UNIVERSITIES:**

**SITE STATUS REPORT FOR THE MILITARY TRUCK SALVAGE YARD AT  
5700 BOUNDARY AVENUE, ANCHORAGE, ALASKA**

**May 31, 2018**

## EXECUTIVE SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) requested that Oak Ridge Associated Universities (ORAU) perform a radiation survey of the property at 5700 Boundary Avenue in Anchorage, Alaska. The property is currently a U-Haul franchise; however, the property was formerly E.A. Patson Parts and Equipment, a military truck salvage yard, which collected military vehicles and "new old stock" (i.e., N.O.S) vehicle parts. It is suspected that radium may have been present at the site in World War II-era vehicles and parts as luminous radium dials, gauges, and instruments. The objective of this survey was to locate possible discrete sources of radium, if any, that would be associated with the former salvage yard operations.

ORAU performed the radiation surveys of the accessible portions of the land area and buildings on July 18-19, 2017. Seven buildings remained on the property from the previous owner. During the survey, ORAU detected radiation levels through exterior walls of two of the buildings. Specifically ORAU measured radiation levels approximately three times the normal background levels outside of one of the buildings, and approximately two times the normal background levels outside of the second building.

Several gauges and dials containing radium paint were identified on the property, most likely remnants from when the site was a military truck salvage yard. The visual and radiation surveys were limited and did not cover the entire two buildings or the contents of the buildings. This was primarily due to the amount of materials and equipment on the floor in one of the buildings and because a key to the second building (with twice background radiation levels) was unavailable. The number of accessible dials and gauges containing radium and measured radiation levels (i.e., containing radium) was limited--fewer than 100 are estimated based on measured radiation levels.

Based on the radiation exposure rate measurements, the building access controls established by the lessee, and using conservative assumptions for time, distance, and shielding, the NRC concludes that no member of the public is likely to receive a dose in excess of 100 mrem/yr.

ORAU recommends that current building access controls (i.e., locked doors with a controlled key) be maintained until radium-containing items can be cataloged and safely stored or dispositioned, as appropriate, and building surfaces are surveyed for radium contamination.

## SITE STATUS REPORT

Property: Former Military Truck Salvage Yard  
E.A. Patson Parts and Equipment  
5700 Boundary Avenue  
Anchorage, Alaska 99504

Docket Number: 03038976

Current Property Name: U-Haul Moving and Storage of North Anchorage

Current Property Owner: Amerco Real Estate Company

Inspection Dates: July 18-19, 2017

Inspector(s): Rachel Browder, CHP/U.S. Nuclear Regulatory Commission (NRC),  
supported by Kaitlin Engel/Oak Ridge Associated Universities (ORAU)

### 1.0 INTRODUCTION

The Energy Policy Act of 2005 amended section 11e.(3) of the Atomic Energy Act of 1954 to place discrete sources of radium-226 (Ra-226) under NRC regulatory authority as byproduct material. The NRC is evaluating properties where Oak Ridge National Laboratory's (ORNL's) review of historical information has identified Ra-226 use. Since it is possible that Ra-226 could be present in World War II-era vehicles and parts in the form of luminous radium dials, gauges, and instruments, ORNL included the property at 5700 Boundary Avenue in Anchorage, Alaska in its list of historical sites (ORNL 2015). The site was identified as the former military truck salvage yard known as E.A. Patson Parts and Equipment, which collected military vehicles and "new old stock" (i.e. N.O.S) vehicle parts. The objectives of the initial site visit were to determine if discrete sources of Ra-226 and/or distributed Ra-226 contamination were present, to identify the areas of highest contamination, to determine if there were any current health and safety concerns, and to determine if a scoping survey was needed. Surveys were performed as described within NRC's procedure, Temporary Instruction (TI) 2800/043, "Inspection of Facilities Potentially Contaminated with Discrete Radium-226 Sources" (NRC 2017).

Data collected during the July 18-19, 2017, initial site visit may generally be used to plan future actions that may be needed to reduce the radiation exposure of Ra-226 for current or future site occupants to levels that do not exceed the applicable regulatory requirement. It is important to note that destructive testing is not generally performed, as described within TI 2800/043.

### 2.0 PROPERTY DESCRIPTION AND INITIAL SITE VISIT CONSIDERATIONS

#### 2.1 Property Description and History

E.A. Patson Parts and Equipment, the military truck salvage yard, was founded in 1954. The company collected old military vehicles and N.O.S. vehicle parts. The salvage yard closed in 2013 (ORNL 2015), and the property is currently owned by the Amerco Real Estate Company occupied by U-Haul Moving and Storage of North Anchorage (U-Haul, lessee).

Figure 1 depicts the 12,200 m<sup>2</sup> (3-acre) property in 2002 when occupied by the former military truck salvage yard. An on-line video from November 2013 provides a virtual tour of the salvage yard property (Alaska Trucker 2013). As shown in Figure 1 and in the video, trees, stock-piled materials (i.e., old vehicles, tires, etc.), and a variety of storage sheds and structures covered much of the property grounds. The storage sheds and structures contained the smaller vehicle parts (e.g., N.O.S.) and various other items.

Figure 2 and pictures in Appendix A illustrate the property in its current (2017) configuration. For the purposes of this report, the buildings have been labeled as “Main Building,” U-Haul Storage Building, “Old Building,” and Building 1 through Building 5. As shown in Figure 2, the site has been cleared and paved, though seven of the original structures remain. After clearing trees and stockpiled materials, gravel was used to level the property, and a large U-Haul Storage Building was built on the western side of the property. The northern most (Main) building is currently used by U-Haul as the office and showroom. The “Main Building” has new windows and brick trim on its northern and western sides. The other original buildings have roofs and new metal siding facades. Based on entry into one of the former buildings, the older structures are constructed of wood beams and wood supports, with chip board walls. Remaining original buildings are used to store leftover items from the former salvage yard and are locked to limit access. One of the original buildings (labeled as “Old Bldg.” in Figure 2) was entered, though total access was limited because the floors were covered in old parts, broken glass, and fallen shelving (pictured in Appendix A). It is believed that the “Old Building” is shown in the video clip from minutes 5:50 to 8:00 (Alaska Trucker 2013).

An extensive internet search of public records did not reveal any information related to Ra-226 contamination or radiation exposure levels associated with the facility. The site summary included in the *Historical Non-Military Radium Sites Research Effort Addendum* report provides additional site details about the type, form, history, potential locations, and other information related to discrete sources of Ra-226 used at the site (ORNL 2015).

## 2.2 Initial Site Visit Considerations

Prior to commencing survey activities, the general layout of the property was examined for consistency with historical information and to identify impediments to conducting the survey and any potential health and safety considerations. The site had been paved over, and a new large U-Haul Storage Building was recently added along the western edge of the property. Only the hallways of the storage building were available for survey because individual storage units were locked. Multiple U-Haul trucks and trailers were parked on the property. Several standing buildings were present when E.A. Patson Parts and Equipment occupied the site. One original, the “Main Building,” was maintained and used by U-Haul as the office and showroom. Buildings 1 through 5 were locked, so an assessment of those buildings was not performed. The ORAU representative and NRC inspector were granted access into the “Old Building” with the lessee and observed the floors covered in parts, broken glass, fallen shelving, etc., which hindered access throughout the “Old Building.” As a result of the clutter and inaccessible areas of the building, the radiation surveys of the building and contents were limited (see Appendix A). In addition, the lessee suggested that the structural integrity of the “Old Building” was questionable (walls sometimes shift) and the long-term objective was to have the building razed.



Figure 1. Military Truck Salvage Yard Site Image from 2002 (Google Earth 2017)

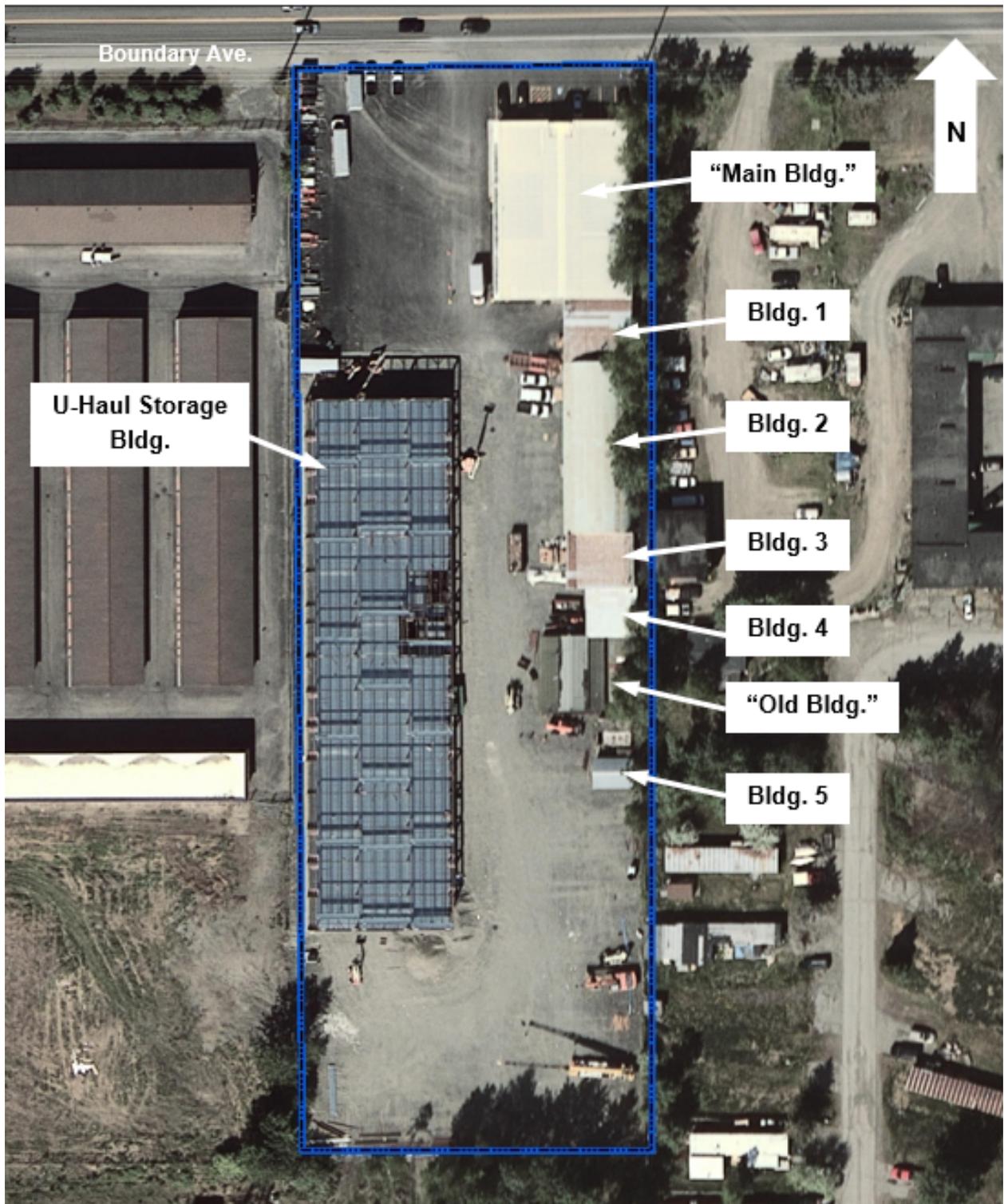


Figure 2. Military Truck Salvage Yard Site (ArcMap 2017)  
Blue delineates the property boundary.

### 3.0 SITE OBSERVATIONS AND FINDINGS

#### 3.1 Summary of Activities

The ORAU representative and NRC inspector conducted an initial site visit at the 5700 Boundary Avenue property on July 18-19, 2017. The site contact (lessee) was unavailable on July 18, 2017, for the pre-inspection meeting but gave permission for surveys to commence. However, the lessee was available on July 19, 2017, to provide access into the “Old Building.”

Radiation surveys, performed by the ORAU representative and NRC inspector, consisted of gamma radiation scans using a Ludlum model 44-10 2-inch by 2-inch (2×2) sodium iodide detector connected to a Ludlum model 2221 ratemeter/scaler, alpha-plus-beta radiation direct measurements using a Ludlum model 44-142 plastic scintillator connected to a Ludlum model 2221 ratemeter/scaler, and radiation exposure rate measurements using a Ludlum model 192 sodium iodide-based microRoentgen ( $\mu\text{R}$ ) ratemeter.<sup>1</sup> Field gamma spectrum measurements were made with a SAM-940 gamma spectrum analyzer. Table 1 presents the specific instruments used during the site visit. In addition, one smear sample was also collected from one of the gauges selected from the “Old Building” to quantify the removable surface activity levels.

<b>Radiation Type (units)</b>	<b>Detector Type</b>	<b>Detector Model (Number)</b>	<b>Ratemeter (Number)</b>
Alpha-plus-beta (cpm)	Plastic Scintillator	44-142 (689)	2221 (505)
Gross gamma (cpm)	Sodium Iodide	44-10 (1152)	2221 (403)
Gross gamma ( $\mu\text{R}/\text{h}$ )	Sodium Iodide	192 (1127)	Exposure Meter
Gamma Spectrum Analyzer (SAM-940)	Lanthanum Bromide	940 (40272) <sup>a</sup>	N/A

N/A = not applicable

Number = ORAU equipment barcode

cpm = counts per minute

$\mu\text{R}/\text{h}$  = microRoentgen per hour

<sup>a</sup>Device performs automatic calibration upon startup and is source checked before use.

#### Summary of Daily Activities – July 18, 2017:

The ORAU representative and NRC inspector arrived at the site at 9:45 a.m. Surveys began on the land area, including the paved lot and graveled surfaces surrounding the perimeter of the property. The team used a 2×2 sodium iodide detector connected to global positioning system equipment and model 192 exposure ratemeter to measure gamma radiation levels.

Approximately 70 percent of the total land area was surveyed, including all accessible areas not covered by vehicles or trailers. No discrete areas exhibiting elevated radiation were identified over the land area.

<sup>1</sup> NOTE: Roentgen is a unit of exposure (energy absorbed in air), whereas a rem is a unit of dose delivered to a person (resulting from the radiation energy absorbed in that person). While Roentgen and rem are related, these are different units. Because they are similar for gamma ray energies from Ra-226, NRC makes the simplifying assumption in this case that these units are equivalent (1 Roentgen = 1 rem).

The ORAU representative and NRC inspector continued to perform surveys inside the “Main Building” using a 2×2 sodium iodide detector and model 192 exposure ratemeter. Approximately 50 percent of the “Main Building” was surveyed, including items on display from the former military truck salvage yard such as an old gasoline pump, a moped, helmet, warning light, etc. No discrete areas exhibiting radiation levels above background were identified inside the “Main Building.”

The ORAU representative and NRC inspector then surveyed around the accessible, outside perimeter of the remaining original buildings using a 2×2 sodium iodide detector and model 192 exposure ratemeter. The west sides of the original buildings were accessible and were surveyed. The east sides of the buildings were close to the property fence and inaccessible and, therefore, were not surveyed. The south sides of the “Old Building” and Building 5 were accessible and were surveyed. Based on 2×2 sodium iodide detector and exposure ratemeter responses, small increases in radiation levels were measured through the exterior walls of two of the original buildings; Building 4 and the “Old Building” in Figure 2. One location of slightly increased radiation levels was identified near the middle of Building 4 on the west side. The other locations were on the northwest corner, southwest corner, south side, and southeast corner of the “Old Building.” Both contact and 1-meter exposure rate measurements were collected for each location. Direct measurements and smears were not collected on building exteriors, as it was suspected that the radiation was coming from items located inside the buildings and not from contamination on the exterior walls, based on the historical information of the facility and the recently added exterior siding on the buildings. Both buildings were locked and could not be entered.

Finally, the ORAU representative and NRC inspector surveyed inside of the newly built U-Haul Storage Building using a 2×2 sodium iodide detector and model 192 exposure ratemeter to measure gamma radiation levels. No discrete areas exhibiting elevated radiation were identified. Approximately 10 percent of the first floor of the Storage Building was surveyed. The inspection team departed the site at 7:00 p.m.

#### Summary of Daily Activities – July 19, 2017:

The ORAU representative and NRC inspector arrived at the site at 10:00 a.m. and met with the site contact (lessee) who provided access into the “Old Building.” Limited surveys (approximately five percent of the building) were performed using a 2×2 sodium iodide detector and model 192 exposure ratemeter. Several instrument panels containing dials and gauges were identified in the southwest corner, immediately inside the building. Based on survey measurements, some of the intact dials and gauges exhibited gamma radiation levels indicative of dials and gauges that contained radium. Other dials and gauges were identified on shelves inside the building, but these dials and gauges did not exhibit elevated radiation levels indicative of radium contamination. In addition, it appeared the majority of the dials and gauges observed were intact. There were two gauges observed on the shelf that did not have a faceplate; however, it was not confirmed that the two gauges contained radium. One gauge was selected that exhibited higher radiation levels than other ones on the shelf. This particular gauge was removed from the building for further direct measurements and smears. The survey results for this one gauge are provided in Section 3.2. Once this gauge was removed from the building, elevated radiation levels remained the same within the building, suggesting there were multiple discrete sources of Ra-226 in the “Old Building.” Other interior portions of the building were not accessible and therefore there was no additional survey measurements performed to correlate with the radiation measurements recorded on the outside of the building (southeast corner).

Though it was estimated there were fewer than 100 dials and gauges containing radium paint based on visual observations and exposure rate measurements, the building conditions limited accessibility and precluded a thorough investigation.

The site contact stated that he believed that all gauges from the military truck salvage yard were located in the “Old Building.” However, he was unable to provide access into Building 4; therefore, the cause of the small increase in radiation levels along the exterior wall of the building was not determined. The interior of Buildings 1 through 3, and Building 5 were not surveyed because they were locked. Additionally, NRC determined that there was no need to survey these buildings because there were no elevated levels of radiation measured outside the buildings. A post-inspection meeting was held with the lessee to discuss the results of the survey and recommended controls. The inspection team departed the site at 12:00 p.m.

### 3.2 Summary of Results

Select pictures are presented in Appendix A. Appendix B presents maps and tabulated results from the initial site visit conducted on July 18-19, 2017. Figures B-1 through B-5 are maps presenting gamma radiation survey data. Tables B-1 through B-4 present total and removable alpha-plus-beta surface activity results in units of disintegrations per minute per 100 cm<sup>2</sup> (dpm/100 cm<sup>2</sup>), 2x2 sodium iodide gross responses in counts per minute (cpm), and gross exposure rates in μR/h for contact and at 1 meter, as applicable.

The alpha-plus-beta direct measurements and the field count of the smear for removable surface activity in cpm were converted to total surface activity units of dpm/100 cm<sup>2</sup> using the equation below:

$$dpm/100\text{ cm}^2 = \frac{C - B}{\epsilon_{tot} \times G}$$

Where:

C = measured count rate (cpm)

B = background count rate (cpm)

G = geometry factor (unitless) =  $\frac{\text{Physical Detector Area (cm}^2\text{)}}{100\text{ cm}^2} = 1.0$

$\epsilon_{tot}$  = total weighted efficiency (unitless) = 1.6

Due to the number of emissions from Ra-226 and its associated progeny, multiple radiation particles are counted during the surface activity measurement. Therefore, a total weighted efficiency for Ra-226 and its associated progeny was calculated by:

$$\epsilon_{tot} = \sum_n F_n \times \epsilon_{i,n} \times \epsilon_{s,n}$$

Where:

$F_n$  = fractional abundance of n<sup>th</sup> emission

$\epsilon_{i,n}$  = instrument efficiency for n<sup>th</sup> emission

$\epsilon_{s,n}$  = surface efficiency (0.25 for alpha and low-energy beta particles, 0.5 for high-energy beta particles) for n<sup>th</sup> emission

A summary of the survey results are presented in Table 2, below. Gamma radiation levels varied based on proximity with materials known to contain naturally occurring radioactive

material (NORM), i.e., concrete, such as on the west side of the U-Haul Storage Building, and tile in the bathrooms located in the Main Building.

<b>Floor/Area</b>	<b>2×2 Sodium Iodide Gross Response (cpm)</b>	<b>Gross Exposure Rate (μR/h at 1 meter)</b>
Land <sup>a</sup>	2,500 to 22,000	2 to 14
“Main Building”	2,500 to 6,800	3 to 7
U-Haul Storage Building	3,300 to 4,500	3 to 4
Inside “Old Building” <sup>b</sup>	11,000 to 500,000	7 to 45
Background	ORAU Insert cpm	3 to 4

<sup>a</sup>Land area also includes the survey results around the exterior of Building 4 and “Old Building.”

<sup>b</sup>Maximum values recorded for the “Old Building” were on items stored inside.

Field count results from the one gauge that was removed from the “Old Building” for a direct measurement, are presented in Table 3, below. The gauge is pictured in Figure A-9. Further analysis of the smear sample by an independent laboratory did not identify any removable contamination.

<b>Smear ID</b>	<b>2×2 Sodium Iodide Gross Response (cpm)</b>	<b>Gross Exposure Rate (μR/h on contact)</b>	<b>Gross Exposure Rate (μR/h at 1 m)</b>	<b>Total Surface Activity, Alpha-plus-Beta (dpm/100 cm<sup>2</sup>)</b>	<b>Removable Surface Activity, Alpha-plus-Beta (dpm/100 cm<sup>2</sup>)<sup>a</sup></b>	<b>Size (m<sup>2</sup>)</b>
5307R0003	500,000	1,300	7	46,000	43	0.01

<sup>a</sup>Based on field count with same detector used for direct measurement.

### 3.3 Summary of Dose Assessment Results

A site-specific dose assessment has not been performed for the former military truck salvage yard site based on the radiation levels measured during the initial site visit and the controls and limited access to the buildings, are described below. The TI 2800/043 presents two action levels (ALs) that correlate to a public dose estimate of 100 mrem/yr; for an industrial building occupant after 2300 hours of exposure per year (1 meter measurement of 40 μR/h above background), or for a residential building occupant after 6800 hours of exposure per year (1 meter measurement of 15 μR/h above background). These two ALs are based on gamma exposure rate and the time an individual is present in either an industrial building or residential building. These ALs may be used to quickly identify radiation levels that could conservatively produce a dose above the public dose criterion under Title 10 of the *Code of Federal Regulations* Section 20.1301, *Dose limits for individual members of the public*.

Background exposure rate levels vary based on the proximity to NORM-containing materials, such as concrete and tile. The background measurements in accessible site buildings on the property generally ranged from 3 to 4 μR/h, with a maximum of 7 μR/h, which was attributable to tile in the bathrooms. Based on an average of 4 μR/h exposure rate for the property and buildings where customers and U-Haul employees occupied, no member of the general public is likely to receive a dose in excess of 100 mrem/yr.

In addition, the gross exposure rate values recorded for the “Old Building” as documented in Table B-4, were based on items stored inside the building and not for the general area exposure rates throughout the building. The buildings were not occupied in support of the lessee’s site operations, and access to the buildings was limited through the lessee’s control of the locks and keys. Therefore, because there is limited occupancy and the lessee maintained control of the buildings such that the 2300 hour occupancy limit would not be exceeded, it is expected that no member of the general public is likely to receive a dose in excess of 100 mrem/yr.

It should be noted that the entirety of the “Old Building” was not explored and all possible sources of elevated gamma radiation (presumably from discrete sources of Ra-226) could not be identified during the initial site visit. Additionally, the condition of all gauges remaining in the “Old Building” is unknown (i.e., intact or broken). Therefore, it is possible that higher levels of contamination may be present inside the buildings; however, based on the survey measurements around the accessible portions of the perimeter of the building, no member of the general public is likely to receive a dose in excess of 100 mrem/yr.

An evaluation of any contribution to the dose assessment based on the one gauge that was analyzed for alpha-plus-beta total activity was considered. The contact measurement result was 46,000 dpm using the 100 cm<sup>2</sup> 44-142 detector, as documented in Table 3. A field count of the removable surface activity based on a smear of the gauge face showed 43 dpm/100 cm<sup>2</sup>, which is acceptable error propagation of the instrument, and further laboratory analysis of the smear did not indicate any removable radiation activity. The lack of removable activity suggests that external gamma pathway doses would be the most significant (for an intact gauge) and actual reliance on gamma exposure data was acceptable. Therefore, the gamma exposure rate measurements (μR/h) collected during the site visit are sufficient for demonstrating compliance with the 100 mrem/yr public dose criterion.

Finally, Building 4 could not be entered because the key was not available at the time of the site visit. A small but notable increase in radiation levels of approximately 5-7 μR/hr was observed in several locations along the exterior walls of the building, though the source of the increase in radiation levels could not be explored during the initial site visit. However, based on the survey measurements around the accessible portions of the perimeter of Building 4, no member of the general public is likely to receive a dose in excess of 100 mrem/yr.

#### 4.0 OBSERVATIONS AND RECOMMENDATIONS

Based on the data collected, the former military truck salvage yard property located at 5700 Boundary Avenue does contain discrete sources of Ra-226. However, the extent of the items that contain Ra-226 and their integrity is not fully known.

ORAU made the following observations:

- Gamma radiation levels, with a maximum net exposure rate in excess of 40 μR/h, was identified on gauges in the “Old Building.” Access into the “Old Building” was limited due to the structure’s integrity and the materials and equipment on the floor of the building, which hindered access; therefore, the number and condition of discrete sources of Ra-226 is unknown. Radiation levels of (46,000 dpm using the 100 cm<sup>2</sup> 44-142 detector) for alpha-plus-beta was identified on at least one gauge. Because access to the building was limited, it is possible that other dials and gauges would produce similar results.

- Gamma radiation levels of approximately 5-7  $\mu\text{R}/\text{h}$  around outside of Building 4 suggest there are items inside that may also contain Ra-226. The presence, number, and condition of items inside Building 4 is unknown due to lack of access. However, Building 4 was maintained locked and controlled by the lessee, and did not have any windows. Buildings 1, 2, 3 and 5 were not entered; therefore, the presence or absence of discrete sources of Ra-226 could not be absolutely determined. These buildings were not entered because there were no increased levels of radiation measured outside of these buildings.

The NRC inspector communicated to the lessee that doses above 100 mrem/yr are unlikely based on the current limited usage of the buildings and that the controls in place to limit access to the original buildings (i.e., locked doors with a controlled key) should be maintained. In addition, the NRC inspector discouraged anyone from entering the building, since the radiation conditions were not fully quantified and the levels of contamination were unknown.

The current state of the original buildings, located at the former military truck salvage yard site, limits access, thus the total number and condition of discrete sources of Ra-226 is unknown. If the buildings were to collapse (e.g., after a weather event), the Ra-226-containing items could become damaged and/or released to the surrounding environment. It is recommended that contents inside of the "Old Building" and possibly inside Building 4 be removed, inventoried, placed in a stable storage, or dispositioned by a licensed entity. Prior to razing the "Old Building" and Building 4, shelving, flooring, etc., should be surveyed and dispositioned, accordingly. Other original buildings that were inaccessible during the initial site visit should also be surveyed for discrete sources of Ra-226, when available. The owner should control and mitigate risks from exposure to discrete sources of Ra-226 at the military truck salvage yard facility, especially as related to broken items with removable activity, and buildings with areas exhibiting elevated activity.

## 5.0 REFERENCES

Alaska Trucker 2013. *Salvage Yard of Military Trucks*, Published on 11/27/2013, <https://www.youtube.com/watch?v=6WUvFwri44w&lc=z12pt1oydrncibzui22qwlkj5ufhcrd10.1385764152733691>, accessed 07/26/2017.

ArcMap 2017. [Computer software], Version 10.5.1, Esri, Redlands, California, <https://desktop.arcgis.com/en/arcmap/>, June.

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Midwest Military 2017. Midwest Military, Inc., Prior Lake, Minnesota, <https://midwestmilitary.com/index.htm>, accessed 07/26/2017.

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ORNL 2015. *Historical Non-Military Radium Sites Research Effort Addendum*, "Military Truck Salvage Yard: Site Summary: Site Summary," pp. 93-96, Oak Ridge National Laboratory, Oak Ridge, Tennessee, November 24. (ADAMS Accession No. ML16291A488)

**APPENDIX A**

**PHOTOS FROM THE MILITARY TRUCK SALVAGE YARD SITE VISIT**



**A-1. Original Bldgs. Looking Northeast**



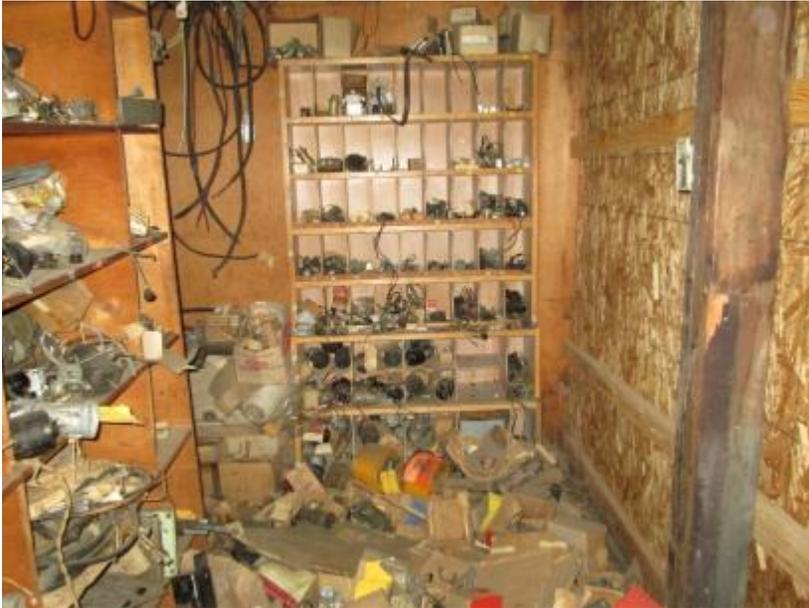
**A-2. Old Bldg. West Side Looking East**



**A-3. Old Bldg. South Side Looking East**



**A-4. Inside Old Bldg.**



**A-5. Inside Old Bldg. Southwest Corner Elevated Radiation Levels**



**A-6. Shelving Inside Old Bldg.**



**A-7. Floor Inside Old Bldg.**



**A-8. Shelving Inside Old Bldg.**



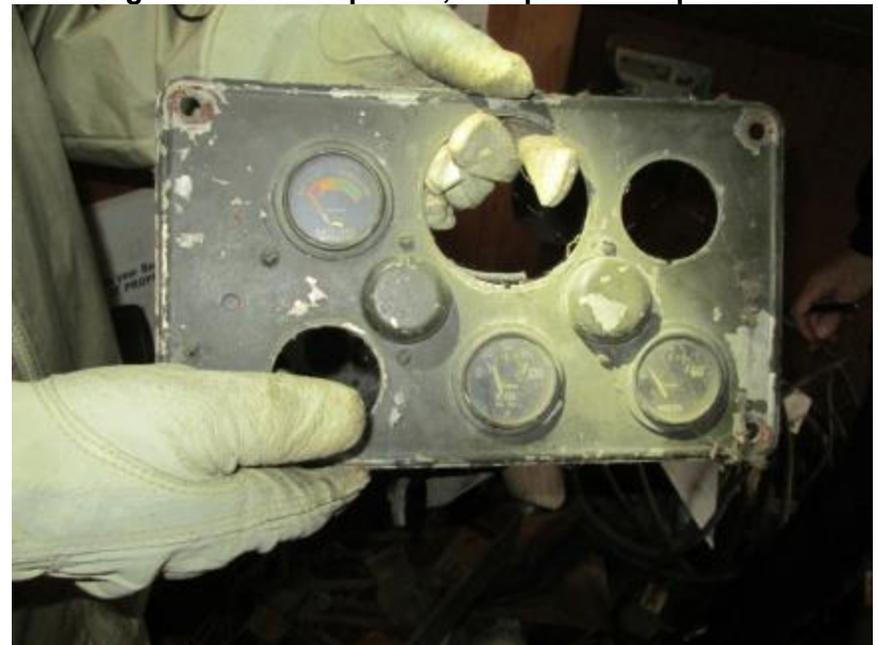
**A-9. Gauge from which Additional Data was Collected (5307R0003)**



**A-10. Gauge Found with up to 30,000 cpm and 16  $\mu$ R/h on contact**



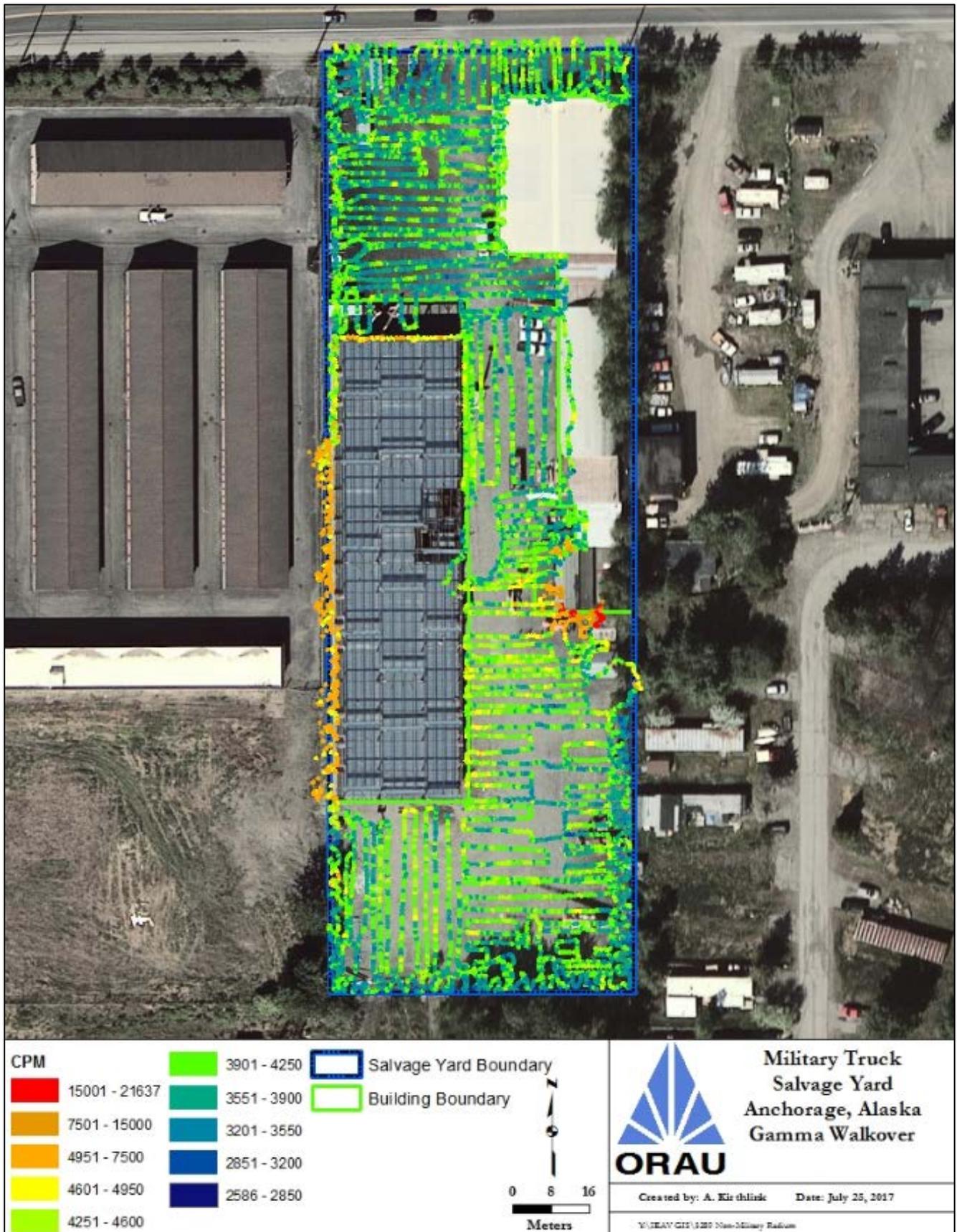
**A-11. Gauges Found with Measurable Exposure Rates up to 100  $\mu$ R/h on contact**



**A-12. Gauges Found with Measurable Exposure Rates up to 100  $\mu$ R/h on contact**

**APPENDIX B**

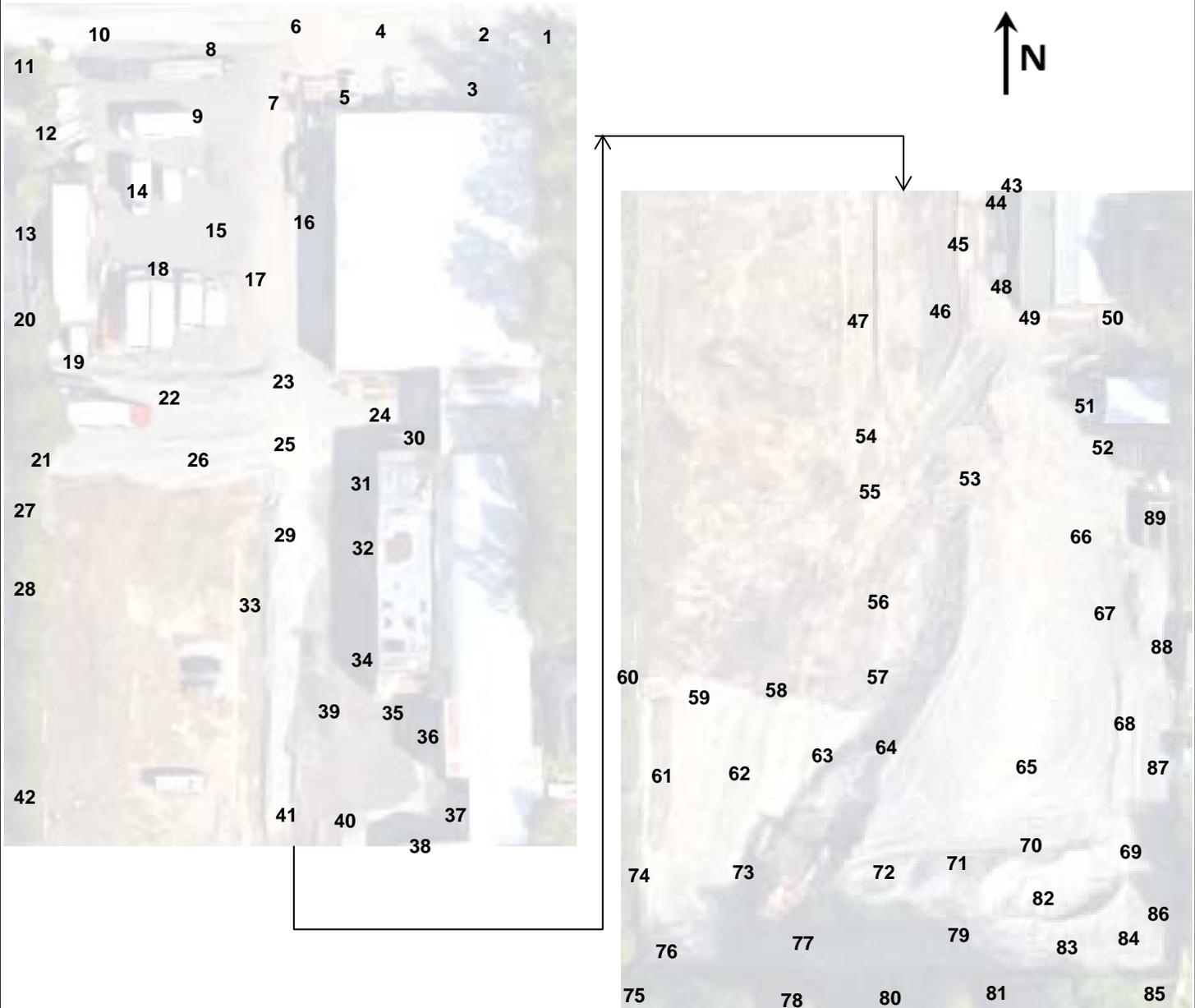
**SURVEY RESULTS FROM THE MILITARY TRUCK SALVAGE YARD SITE VISIT**



**Figure B-1. Gamma Walkover Survey Data for the Land Area**

<b>Site:</b> Military Truck Salvage Yard		<b>Area:</b> Land		<b>Date(s):</b> 07/18/2017		<b>Time:</b> 1020-1815	
<b>Surveyor(s):</b> KME				<b>Purpose:</b> Site Visit			
<b>Radiation Type</b>		<b>Instrument</b>		<b>Detector</b>		<b>Background</b>	
Gamma		192 No. 1127		NA		2-5 $\mu\text{R}/\text{h}^{\text{a}}$	
Gamma		NA		NA		NA	
NA		NA		NA		NA	

<sup>a</sup>Background varied depending on naturally occurring radioactive material in the area.



# = General area measurements provided in attached table.

**Figure B-2. Land Area Survey Map**

**Table B-1. Military Truck Salvage Yard Survey Results - Land Area**

Location No.	Gamma <sup>a</sup>	Comments
	μR/h at 1 meter	
1	3	Gravel
2	3	
3	3	
4	3	
5	4	
6	3	
7	3	
8	3	
9	3	
10	3	
11	4	Gravel
12	3	
13	4	Gravel
14	3	
15	3	
16	3	
17	3	
18	3	
19	3	
20	4	Gravel
21	4	
22	3	
23	3	
24	3	
25	3	
26	3	
27	4	Gravel
28	5	Gravel
29	3	
30	3	
31	3	
32	3	
33	3	
34	2	
35	3	
36	3	
37	5	Elevated readings from inside building. Measurement 1 m from building at 1 m above the ground
38	3	
39	3	
40	3	
41	3	
42	5	Gravel
43	7	On Contact, unable to take 1 m reading due to trailer
44	7	On Contact, unable to take 1 m reading due to trailer
45	3	
46	3	
47	3	
48	14	1 m from building at 1 m above the ground

**Table B-1. Military Truck Salvage Yard Survey Results - Land Area**

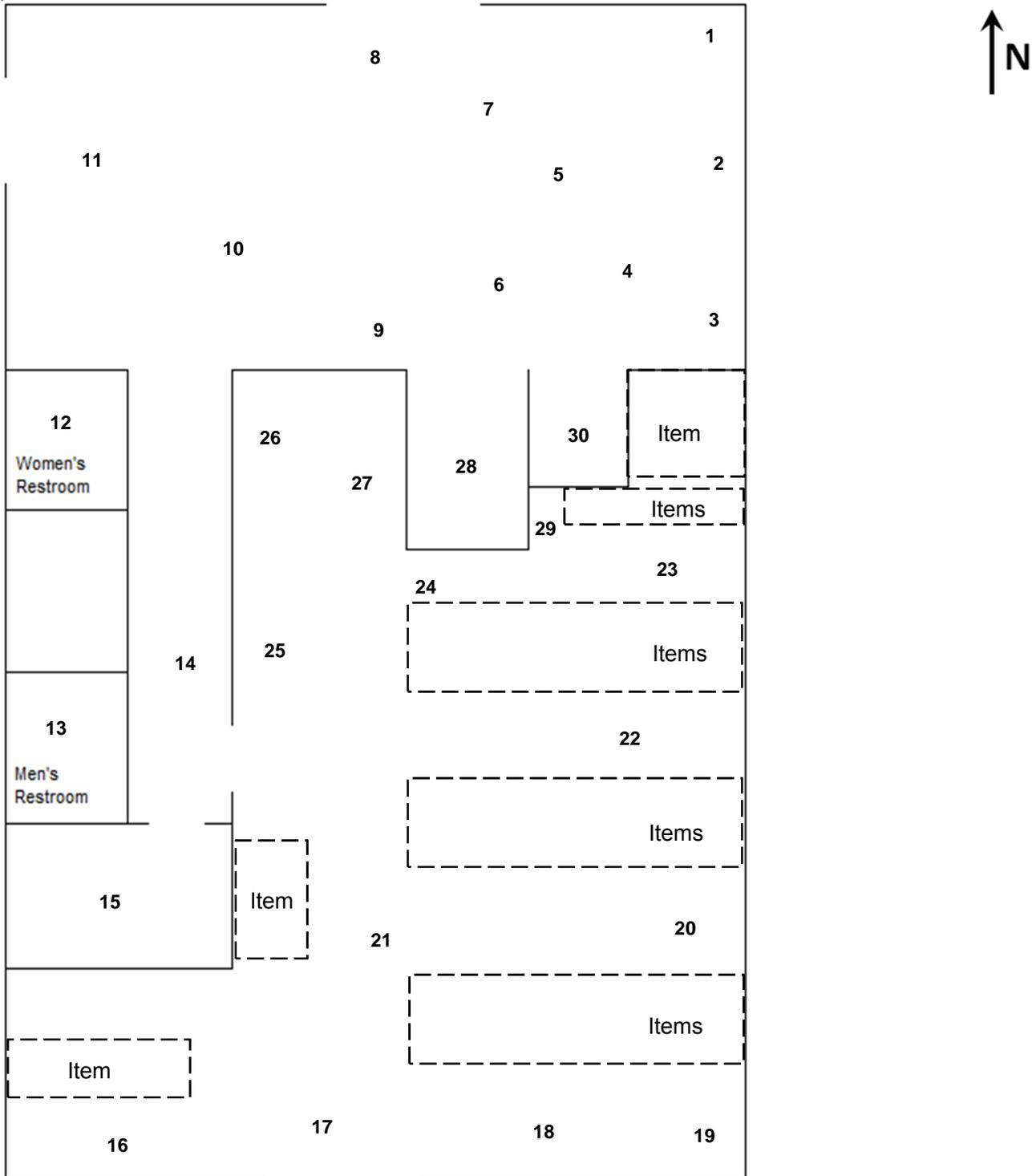
Location No.	Gamma <sup>a</sup>	Comments
	μR/h at 1 meter	
49	13	1 m from building at 1 m above the ground
50	13	1 m from building at 1 m above the ground
51	3	
52	4	
53	4	
54	4	
55	4	
56	4	
57	4	
58	3	
59	3	
60	5	Gravel
61	4	
62	3	
63	4	
64	4	
65	4	
66	4	
67	4	
68	4	
69	4	
70	3	
71	4	
72	4	
73	4	
74	4	Gravel
75	3	Gravel
76	3	
77	4	
78	3	Gravel
79	3	
80	3	Gravel
81	3	Gravel
82	4	
83	3	
84	4	
85	3	Gravel
86	3	Gravel
87	4	Gravel
88	3	Gravel
89	5	Gravel

a) Ludlum 44-10 NaI with Ludlum 2221 rate meter; Ludlum 192 NaI

<b>Site:</b> Military Truck Salvage Yard	<b>Area:</b> Inside Main Building	<b>Date(s):</b> 07/18/2017	<b>Time:</b> 1430/1510
<b>Surveyor(s):</b> KME		<b>Purpose:</b> Site Visit	

Radiation Type	Instrument	Detector	Background
Gamma	2221 No. 403	44-10 No. 1152	2.5-6.8 kcpm <sup>a</sup>
Gamma	192 No. 1127	NA	3-7 μR/h <sup>a</sup>

<sup>a</sup>Background varied depending on naturally occurring radioactive material in the area.



# = Measurements provided in attached table.

**Figure B-3. "Main Bldg." Survey Map**

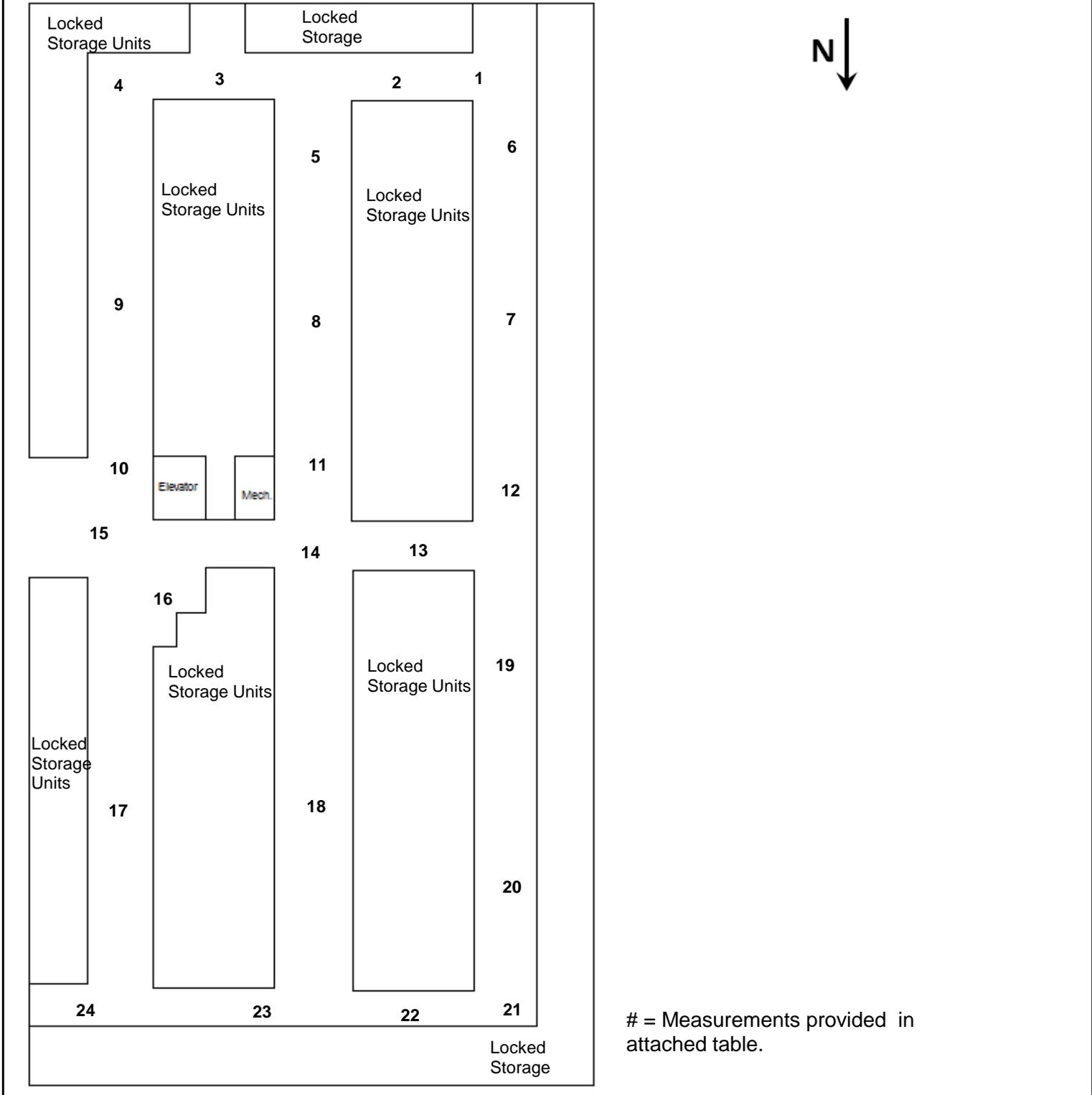
Table B-2. Military Truck Salvage Yard Survey Results - "Main Bldg."			
Location No.	Gamma <sup>c</sup>		Comments
	Contact	1 m	
	cpm	μR/hr	
1	3,800	4	
2	3,700	3	
3	4,400	4	
4	4,100	3	
5	4,400	4	
6	4,400	3	
7	4,500	4	
8	4,000	4	
9	4,300	3	
10	4,400	3	
11	4,300	4	
12	6,800	7	New tile flooring
13	6,400	4	New tile flooring
14	4,300	3	
15	3,800	3	
16	4,000	4	
17	2,500	3	
18	3,800	3	
19	4,100	3	
20	4,500	3	
21	3,800	3	
22	4,400	3	
23	4,600	3	
24	4,100	3	
25	4,400	3	
26	3,900	3	
27	4,200	3	
28	4,100	3	
29	4,200	3	
30	4,200	4	

a) Ludlum 44-10 NaI with Ludlum 2221 rate meter; Ludlum 192 NaI

<b>Site:</b> Military Truck Salvage Yard	<b>Area:</b> U-Haul Storage Bldg.	<b>Date(s):</b> 07/18/2017	<b>Time:</b> 1815/1840
<b>Surveyor(s):</b> KME		<b>Purpose:</b> Site Visit	

Radiation Type	Instrument	Detector	Background
Gamma	2221 No. 403	44-10 No. 1152	3.3-4.5 kcpm <sup>a</sup>
Gamma	192 No. 1127	NA	3-4 μR/h <sup>a</sup>

<sup>a</sup>Background varied depending on naturally occurring radioactive material in the area.



**Figure B-4. U-Haul Storage Bldg. Survey Map**

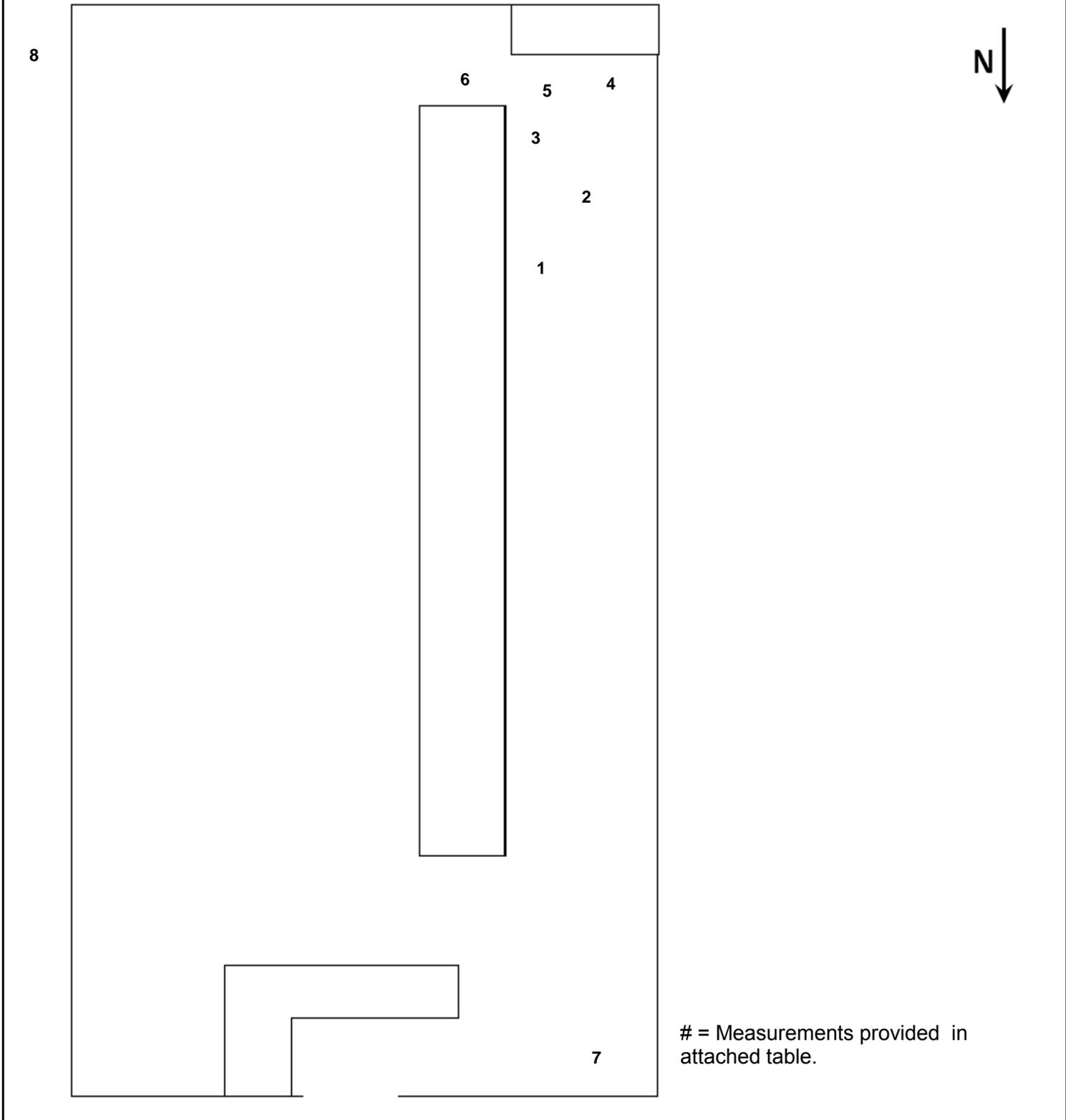
<b>Table B-3. Military Truck Salvage Yard Survey Results - U-Haul Storage Bldg.</b>			
<b>Location No.</b>	<b>Gamma<sup>c</sup></b>		<b>Comments</b>
	<b>Contact</b>	<b>1 m</b>	
	<b>cpm</b>	<b>μR/hr</b>	
1	4,200	3	
2	3,900	3	
3	4,300	3	
4	4,100	3	
5	4,100	4	
6	3,800	3	
7	4,000	3	
8	3,900	3	
9	4,200	4	
10	3,800	3	
11	4,500	4	
12	4,100	3	
13	4,100	3	
14	3,700	4	
15	4,200	3	
16	4,200	4	
17	4,400	4	
18	3,300	3	
19	4,300	4	
20	3,600	4	
21	3,800	3	
22	4,000	3	
23	4,000	3	
24	3,900	3	

a) Ludlum 44-10 NaI with Ludlum 2221 rate meter; Ludlum 192 NaI

<b>Site:</b> Military Truck Salvage Yard	<b>Area:</b> Old Building	<b>Date(s):</b> 07/19/2017	<b>Time:</b> 1000/1200
<b>Surveyor(s):</b> KME		<b>Purpose:</b> Site Visit	

<b>Radiation Type</b>	<b>Instrument</b>	<b>Detector</b>	<b>Background</b>
Gamma	2221 No. 403	44-10 No. 1152	3.4-5 kcpm <sup>a</sup>
Gamma	192 No. 1127	NA	3-4 $\mu$ R/h <sup>a</sup>
Alpha-plus-Beta	2221 No. 505	44-142 No. 689	267 cpm

<sup>a</sup>As determined from land area surveys.



**Figure B-5. "Old Bldg." Survey Map**

**Table B-4. Military Truck Salvage Yard Survey Results - "Old Bldg."**

Location No.	Removable <sup>a</sup>		Alpha-plus-Beta <sup>b</sup>		Gamma <sup>c</sup>			Comments
	Smear No.	(dpm/100 cm <sup>2</sup> )	Gross	Total	Contact		1 m	
		Alpha-plus-Beta	cpm	dpm/100 cm <sup>2</sup>	cpm	µR/hr	µR/hr	
1	--	--	--	--	11,000	--	--	
2	--	--	--	--	57,000	--	--	
3	5307R0003	43	69,302	46,000	500,000	1,300	7	Gauge 8340566, model SW503-E
4	--	--	--	--	--	--	34	
5	--	--	--	--	--	--	45	
6	--	--	--	--	--	390	40	Near shelves with gauges
7	--	--	--	--	--	100	--	Small gauges
8	--	--	--	--	200,000	--	--	

a) Smear field counted with Ludlum 44-142 plastic scintillator with Ludlum 2221 rate meter

b) Ludlum 44-142 plastic scintillator with Ludlum 2221 rate meter

c) Ludlum 44-10 NaI with Ludlum 2221 rate meter; Ludlum 192 NaI

-- indicates measurement not collected at this location

**Enclosure 2**

**U.S. NUCLEAR REGULATORY COMMISSION  
APPLICABLE REGULATIONS FROM  
TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS***



Home > NRC Library > Document Collections > NRC Regulations (10 CFR) > Part Index > § 20.2008 Disposal of certain byproduct material.

## **§ 20.2008 Disposal of certain byproduct material.**

(a) Licensed material as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in §20.1003 may be disposed of in accordance with part 61 of this chapter, even though it is not defined as low-level radioactive waste. Therefore, any licensed byproduct material being disposed of at a facility, or transferred for ultimate disposal at a facility licensed under part 61 of this chapter, must meet the requirements of § 20.2006.

(b) A licensee may dispose of byproduct material, as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in § 20.1003, at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005.

[72 FR 55922, Oct. 1, 2007]

*Page Last Reviewed/Updated Tuesday, August 29, 2017*



Home > NRC Library > Document Collections > NRC Regulations (10 CFR) > Part Index > § 31.12 General license for certain items and self-luminous products containing radium-226

## **§ 31.12 General license for certain items and self-luminous products containing radium-226**

(a) A general license is hereby issued to any person to acquire, receive, possess, use, or transfer, in accordance with the provisions of paragraphs (b), (c), and (d) of this section, radium-226 contained in the following products manufactured prior to November 30, 2007.

(1) Antiquities originally intended for use by the general public. For the purposes of this paragraph, antiquities mean products originally intended for use by the general public and distributed in the late 19th and early 20th centuries, such as radium emanator jars, revigators, radium water jars, radon generators, refrigerator cards, radium bath salts, and healing pads.

(2) Intact timepieces containing greater than 0.037 megabecquerel (1 microcurie), nonintact timepieces, and timepiece hands and dials no longer installed in timepieces.

(3) Luminous items installed in air, marine, or land vehicles.

(4) All other luminous products, provided that no more than 100 items are used or stored at the same location at any one time.

(5) Small radium sources containing no more than 0.037 megabecquerel (1 microcurie) of radium-226. For the purposes of this paragraph, "small radium sources" means discrete survey instrument check sources, sources contained in radiation measuring instruments, sources used in educational demonstrations (such as cloud chambers and spinthariscopes), electron tubes, lightning rods, ionization sources, static eliminators, or as designated by the NRC.

(b) Persons who acquire, receive, possess, use, or transfer byproduct material under the general license issued in paragraph (a) of this section are exempt from the provisions of 10 CFR parts 19, 20, and 21, and § 30.50 and 30.51 of this chapter, to the extent that the receipt, possession, use, or transfer of byproduct material is within the terms of the general license; provided, however, that this exemption shall not be deemed to apply to any such person specifically licensed under this chapter.

(c) Any person who acquires, receives, possesses, uses, or transfers byproduct material in accordance with the general license in paragraph (a) of this section:

(1) Shall notify the NRC should there be any indication of possible damage to the product so that it appears it could result in a loss of the radioactive material. A report containing a brief description of the event, and the remedial action taken, must be furnished to the Director of the Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 within 30 days.

(2) Shall not abandon products containing radium-226. The product, and any radioactive material from the product, may only be disposed of according to § 20.2008 of this chapter or by transfer to a person authorized by a specific license to receive the radium-226 in the product or as otherwise approved by the NRC.

(3) Shall not export products containing radium-226 except in accordance with part 110 of this chapter.

(4) Shall dispose of products containing radium-226 at a disposal facility authorized to dispose of radioactive material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005, by transfer to a person authorized to receive radium-226 by a specific license issued under part 30 of this chapter, or equivalent regulations of an Agreement State, or as otherwise approved by the NRC.

(5) Shall respond to written requests from the NRC to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by providing the Director of the Office of Nuclear Material Safety and Safeguards, by an appropriate method listed in § 30.6(a) of this chapter, a written justification for the request.

(d) The general license in paragraph (a) of this section does not authorize the manufacture, assembly, disassembly, repair, or import of products containing radium-226, except that timepieces may be disassembled and repaired.

[53 FR 19246, May 27, 1988; 72 FR 55927 Oct. 1, 2007; 79 FR 75739, Dec. 19, 2014]

*Page Last Reviewed/Updated Tuesday, August 29, 2017*



Home > NRC Library > Document Collections > NRC Regulations (10 CFR) > Part Index > § 30.6 Communications.

## § 30.6 Communications.

(a) Unless otherwise specified or covered under the regional licensing program as provided in paragraph (b) of this section, any communication or report concerning the regulations in parts 30 through 37 and 39 of this chapter and any application filed under these regulations may be submitted to the Commission as follows:

(1) By mail addressed: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

(2) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland.

(3) Where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at <http://www.nrc.gov/site-help/e-submittals.html>; by e-mail to [MSHD.Resource@nrc.gov](mailto:MSHD.Resource@nrc.gov); or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(b) The Commission has delegated to the four Regional Administrators licensing authority for selected parts of its decentralized licensing program for nuclear materials as described in paragraph (b)(1) of this section. Any communication, report, or application covered under this licensing program must be submitted to the appropriate Regional Administrator. The Administrators' jurisdictions and mailing addresses are listed in paragraph (b)(2) of this section.

(1) The delegated licensing program includes authority to issue, renew, amend, cancel, modify, suspend, or revoke licenses for nuclear materials issued pursuant to 10 CFR parts 30 through 36, 39, 40, and 70 to all persons for academic, medical, and industrial uses, with the following exceptions:

(i) Activities in the fuel cycle and special nuclear material in quantities sufficient to constitute a critical mass in any room or area. This exception does not apply to license modifications relating to termination of special nuclear material licenses that authorize possession of larger quantities when the case is referred for action from NRC's Headquarters to the Regional Administrators.

(ii) Health and safety design review of sealed sources and devices and approval, for licensing purposes, of sealed sources and devices.

(iii) Processing of source material for extracting of metallic compounds (including Zirconium, Hafnium, Tantalum, Titanium, Niobium, etc.).

(iv) Distribution of products containing radioactive material under §§ 32.11 through 32.30 and 40.52 of this chapter to persons exempt from licensing requirements.

(v) New uses or techniques for use of byproducts, source, or special nuclear material.

(2) *Submissions.* (i) *Region I.* The regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region I non-Agreement States and the District of Columbia: Connecticut, Delaware, and Vermont. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region I, Nuclear Material Section B, Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406–2713; where email is appropriate it should be addressed to *RidsRgn1MailCenter.Resource@nrc.gov*.

(ii) *Region II.* The regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region II non-Agreement States and territories: West Virginia, Puerto Rico, and the Virgin Islands. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region I, Nuclear Material Section B, Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406–2713; where email is appropriate it should be addressed to *RidsRgn1MailCenter.Resource@nrc.gov*.

(iii) *Region III.* (A) The regional licensing program for mining and milling involves all Federal facilities in the region, and non-Federal licensees in the Region III non-Agreement States of Indiana, Michigan, Missouri and the Region III Agreement States of Minnesota, Wisconsin, and Iowa. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region III, Material Licensing Section, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352; where e-mail is appropriate it should be addressed to *RidsRgn3MailCenter.Resource@nrc.gov*.

(B) Otherwise, the regional licensing program involves all Federal facilities in the region and non-Federal licensees in the Region III non-Agreement States of Indiana, Michigan, and Missouri. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region III, Material Licensing Section, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352; where e-mail is appropriate it should be addressed to *RidsRgn3MailCenter.Resource@nrc.gov*.

(iv) *Region IV.* (A) The regional licensing program for mining and milling involves all Federal facilities in the region, and non-Federal licensees in the Region IV non-Agreement States and territory of Alaska, Hawaii, Idaho, Montana, South Dakota, Wyoming and Guam and Region IV Agreement States of Oregon, California, Nevada, New Mexico, Louisiana, Mississippi, Arkansas, Oklahoma, Kansas, Nebraska, and North Dakota. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region IV, Division of Nuclear Materials Safety, 1600 E. Lamar Blvd., Arlington, TX 76011–4511; where email is appropriate, it should be addressed to *RidsRgn4MailCenter.Resource@nrc.gov*.

(B) Otherwise, the regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region IV non-Agreement States and territory: Alaska, Hawaii, Idaho, Montana, South Dakota, Wyoming, and Guam. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region IV, Division of Nuclear Materials Safety, 1600 E. Lamar Blvd., Arlington, TX 76011–4511; where email is appropriate, it should be addressed to *RidsRgn4MailCenter.Resource@nrc.gov*.

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